

WHAT IS CLAIMED IS:

1. An assembly for exchanging retractor support arms within a retractor support clamp, the assembly comprising:
 - a main body having a surface defining a cavity extending into the main body from a first end;
 - a support arm having an end portion having a substantially complimentary configuration to the surface defining the cavity wherein the end portion is positionable within the cavity; and
 - a retaining mechanism disposed about the main body and in communication with the end portion for retaining the end portion within the main body.
2. The assembly of claim 1 wherein the main body further comprises at least one through bore intersecting the cavity.
3. The assembly of claim 2 wherein the retaining mechanism comprises:
 - at least one spheroidal member positioned within the through bore wherein the spheroidal member has a first portion extending into the cavity and a second portion extending beyond an outer surface of the main member; and
 - a housing having a through bore wherein the housing is disposed about the main body and moveable thereon wherein an engaging surface which defines a portion of the through bore engages the second portion of the spheroidal member and forces the first portion of the spheroidal member into the end portion when the housing retains the end portion within the main body.

4. The assembly of claim 3 wherein the engaging surface has a frusto-conical configuration.
5. The assembly of claim 3 wherein the end portion further comprises an annular groove and wherein the first portion of the spheroidal member is disposed within the annular groove and retains the end portion within the main body when the housing is in the first position.
6. The assembly of claim 1 wherein the cavity has a substantially non-round first surface.
7. The assembly of claim 6 wherein the end portion of the retractor support arm has a substantially non-round second surface wherein the second surface engages the first surface to prevent rotation of the end portion of the support arm within the cavity.
8. The assembly of claim 1 and further comprising a compression spring disposed about the main member and in communication with the retaining mechanism wherein the compression spring biases the retaining mechanism into retaining the end portion.
9. The assembly of claim 1 and further comprising a pivot ball attached to a second end of the main body wherein the pivot ball engages the retractor support clamp.
10. A docking apparatus for exchanging retractor support arms within a retractor support apparatus, the docking apparatus comprising:
 - a main body attached to the retractor support apparatus, the main body comprising an internal cavity;

a support arm having an end comprising a substantially complementary configuration to the internal cavity within the main body wherein the end is positionable within the internal cavity; and
a securing mechanism engaging the end of the support arm and the main body wherein the securing mechanism applies a force to the end of the support arm and the main body to retain the end of the support arm within the main body.

11. The apparatus of claim 10 wherein the securing mechanism comprises a coiled flexible spring positioned within the internal cavity and wherein when the end is positioned within the internal cavity the coil flexible spring retains the end within the cavity of the main body.

12. The apparatus of claim 10 wherein the end comprises a non-round portion that engages a non-round port of the internal cavity to prevent rotation of the end within the cavity.

13. The apparatus of claim 10 wherein the end has an axis offset from an axis of the support arm such that when the end is positioned within the cavity the offset axis of the end prevents rotational movement of the end within the cavity.

14. A method of securing a retractor support arm within a docking apparatus attached to a retractor support apparatus, the method comprising:

disposing a spheroidal member within a through bore that intersects a cavity of a main member where a first portion of the spheroidal member is positioned within the cavity;

positioning an end of a retractor support arm within the cavity;

positioning an actuating mechanism disposed about an exterior surface of the main member into a non-engaging position;
forcing the end of the retractor support arm into the cavity wherein the end displaces the first portion of the spheroidal member from the cavity; and
positioning the actuating mechanism into an engaging position wherein an internal surface of the actuating mechanism engages a second portion of the spheroidal member extending beyond the exterior surface of the main member such that the first portion is forced into the internal cavity and engages the end of the retractor support arm and retains the retractor support arm within the main member.

15. The method of claim 14 and further comprising engaging an annular groove of the end of the retractor support arm with the first portion of the spheroidal member to retain the end within the main member.

16. The method of claim 14 and further comprising biasing the actuating mechanism into the engaging position with a compression spring.

17. The method of claim 14 and further comprising engaging a first substantially flat surface of the end with a second substantially flat surface the cavity wherein the first and second flat surfaces contact to rotatably fix the end within the cavity.

18. A kit comprising:
a clamping mechanism;
a first docking station having a proximal end in clamping engagement with the clamping mechanism and a distal docking end; and

a plurality of retractor supports having different configurations, each retractor support having an end portion for engaging the first docking station.

19. The kit of claim 18 wherein the plurality of retractor supports have different cross-sectional configurations.

20. The kit of claim 18 wherein the plurality of retractor supports have different geometric configurations.

21. The kit of claim 18 wherein the clamping mechanism comprises first and second resilient legs defining a clamping bore and with the proximal end of the docking station being positionable within the clamping bore and in clamping engagement with the clamping mechanism.

22. The kit of claim 18 and further comprising a second docking station having a proximal end in clamping engagement with the clamping mechanism and a distal docking end wherein the plurality of retractor supports having different configurations each have the end portion for engaging the second docking station.

23. The kit of claim 22 wherein the second docking station moves within the clamping mechanism independent of the first docking station.

24. An assembly for accepting retractor supports of differing geometric configurations or cross-sectional configurations comprising:

a clamping mechanism;

a docking station having a proximal end in a clamping engagement with the clamping mechanism and a distal docking end; and

a plurality of retractor supports of differing geometric or cross-sectional configurations wherein each of the retractor supports has a substantially identical end portion wherein the end portion engages the distal docking end of the docking station independent of the geometric or cross-sectional configuration of the retractor support.

25. The kit of claim 24 wherein the clamping mechanism comprises first and second resilient legs defining a clamping bore and with the proximal end of the docking station being positionable within the clamping bore and in clamping engagement with the clamping mechanism.

26. The kit of claim 24 and further comprising a second docking station having substantially the same structure of the first docking station wherein the second docking station has a proximal end in clamping engagement with the clamping mechanism and a distal docking end wherein each of the plurality of retractor supports having the substantially identical end portion is positionable within the second docking station.

27. The kit of claim 26 wherein the second docking station moves within the clamping mechanism independent of the first docking station.

28. A clamp for engaging at least one pivot ball attached to a retractor support arm, the clamp comprising:

an upper clamping leg; and

a lower clamping leg pivotally attached to the upper clamping leg wherein the upper and lower clamping legs define a clamp bore and wherein the pivot ball is positioned within the clamping bore

and is secured in a selected position by forcing the upper and lower clamping legs towards each other.

29. The clamp of claim 28 and further comprising:
a shaft position through the upper and lower legs; and
an actuating mechanism coupled to the shaft wherein actuating mechanism moves to force the upper and lower legs together.
30. The clamp of claim 29 wherein the actuating mechanism comprises a camming surface.
31. The clamp of claim 28 and further comprising a second clamping member wherein the second clamping member engages the lower leg of the clamp.
32. The clamp of claim 30 and further comprising a bushing and wherein the bushing is positioned between the second clamping member and the lower leg.